Building a Centralized Data Asset for World's Leading Environmental Solutions Provider

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THE CUSTOMER

Our customer is one of the largest environment management companies in the world and provides water, waste and energy management for both the public and private sectors.

PROBLEM STATEMENT

With our customer supplying 100 million people with drinking water and 61 million people with wastewater service, consolidation of business activities was seen as a gap to be addressed in their goal for sustainability. More importantly, technology had to play a bigger role to optimize water management.

The key issue faced by our customer was discrepancies with invoicing. Accuracy and consistency of data was in question time and again since different versions of master data entities were available in multiple systems, coupled with a high level of compromise of data integrity across various applications with instances of dark data and data unavailability during emergency conditions. There was a crying need to remedy the situation with a technology that built data integrity into the existing architecture.

THE CHALLENGE

Our customer had legacy integration tools running for more than 10 years that lacked proper maintainability, data integrity and support staff. They needed a Unified Data Store model that was robust and could derive a single version of the truth.

Essentially what they required was a culture of compliance that was missing at the time to maintain data integrity leading to numerous challenges to address the gaps in:

1. Identifying the master list of business entities (along with their true source) that flow across multiple internal applications (Ex: Customer, Account, User, Vendor, Cost Center)
2. Optimizing the frequency and/or schedule for changes coming up for such identified master entities from the originating systems
3. Working across distributed applications with diverse data set formats for seamless distribution and consumption of data across applications
4. Using spreadsheets to integrate the master data into a centralized solution
5. Handling of complex business rules while developing transformations
6. Sequencing the processing of master entities to make sure the inter-related data information is available
7. Error handling related to various master data entities

THE SOLUTION

> "With the centralized data asset architecture in place, any new application getting on-boarded and integrated with the solution will have data connected seamlessly with very minimal effort since it is all routed through the common channel."

Aspire took full ownership of initializing, architecting, designing and building an end-to-end data asset solution platform deploying expert-level enterprise solution consultants. This not only extended the suite of Dell Boomi modules but also helped build structure and expertise around a centralized architecture. This helped our customer have one central data asset housing all the master entities with their latest versions. The solution would resolve the issue around data integrity and unavailability of data at the right time for the right set of applications.

1. Aspire designed and developed a Unified Data Store (UDS) layer that established the rest of the data layers defined for various distinct stages of data flow.
2. We created a staging layer for all incoming data from multiple applications, stored in a raw format. Once the data is available in the staging layer, all master entities are then taken into the *master* data layer within the UDS area to have the latest version of the data set. The master data is then synced with Dell Boomi Master Data Management on the cloud arena.

3. Aspire fashioned out Process Integration flows to bring in master data from various sources and perform data merging based on the latest version. Once the latest version of data is made available, it goes through a data cleansing process to remove any errors and finally enrich the data. The fully enriched data is then stored in the master data layer and is treated as a pure golden master record that can be consumed by various applications. Also, data is made available real-time to be consumed by any of the applications that need them.

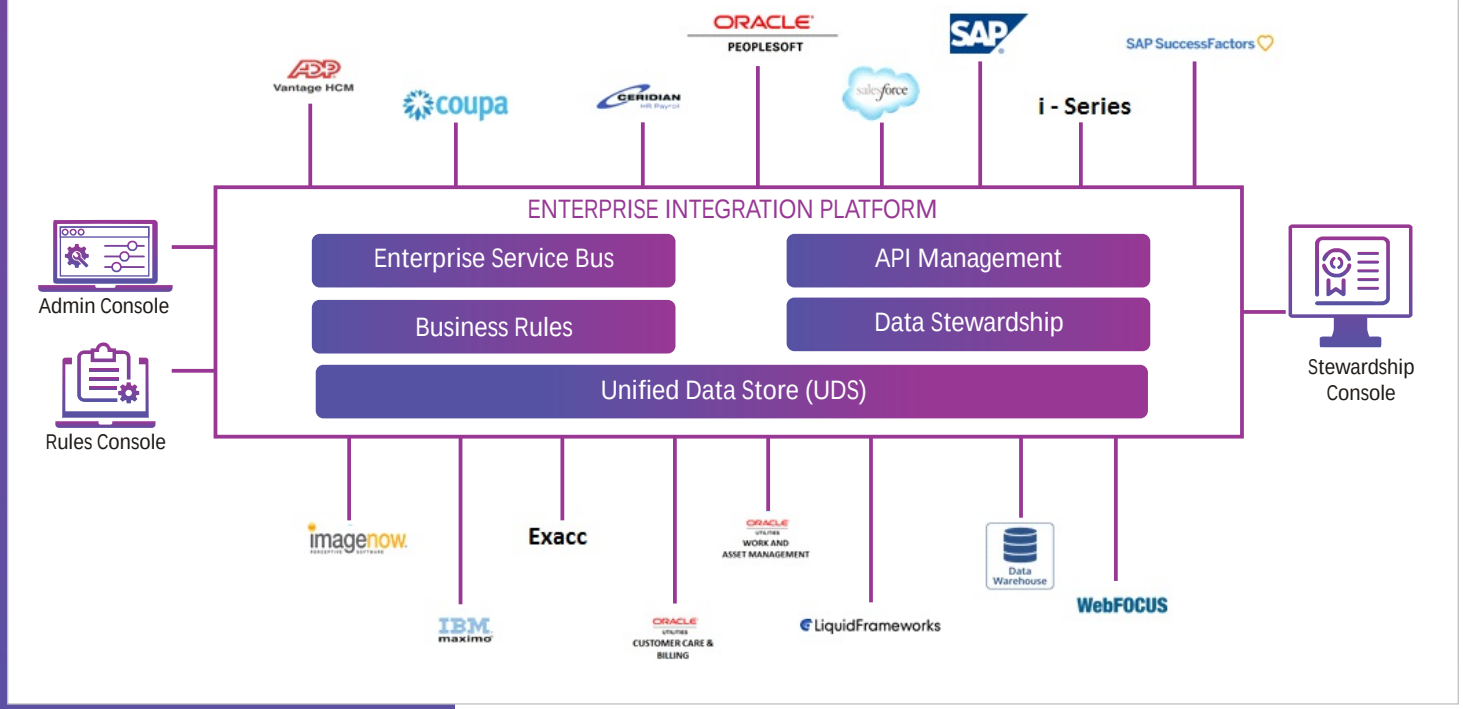
4. Aspire expanded on the Dell Boomi Atomsphere module and defined all process orchestration flows, transformation rules, mapping logic to support various data formats, handle errors and data validations. All possible input data formats are supported in the architecture to consume data from multiple systems/applications. The entire input services within AtomSphere environment are developed using Dell Boomi connectors.

5. We built upon the Dell Boomi API Management module to satisfy the requirements of service oriented architecture by wrapping the process flows using REST based APIs and the entire data layer exposed as services for easy consumption. Consumption of master data is leveraged by APIs for getting data from the UDS layer and publishing them to the target applications. APIs deliver data in a standard canonical format (NRF Standards, OpenHR), but if need be, there are additional services to transform data to the format that the target applications require.

TECHNOLOGY SNAPSHOT

- DELL Boomi Modules
  - » Atomsphere
  - » API Management
  - » Master Data Management
- Oracle 12c
- SAP
- ADP
- COUPA
- Salesforce
- Oracle Asset Management System
- ImageNow
- Exacc
- iSeries billing systems
- Domain Environmental Services

Solution Architecture



RESULTS & ROI

High data quality was maintained with data available from one central location, with no duplicates

Using Aspire's Unified Data Store Model, data was available in real-time with no avenues for data mismatch in any of the systems.

Data in any form (various input source formats) could be consumed and synced to the central data asset location to have a global canonical data format that is universally accepted

Large amount of time was saved due to the entire process being automated and centralized

Errors that happened in invoices earlier were now totally avoided because of the latest accurate data available in the billing system

With this solution, it ensured accurate and real-time reporting for business decision-makers

FUTURE IMPACT

With the centralized data asset architecture in place, any new application getting on-boarded and integrated with the solution will have data connected seamlessly with very minimal effort since it is all routed through the common channel.

Since all data elements are standardized using canonical data model, any new set of metadata getting added can be easily fit in to the existing data model and be readily available for consumption without any additional efforts.

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ABOUT ASPIRE

Aspire Systems is a global technology services firm serving as a trusted technology partner for our customers. We work with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in our specific areas of expertise. Our core philosophy of "Attention. Always." communicates our belief in lavishing care and attention on our customer and employees.

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